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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,329	11/13/2003	Stanley W. Stephenson III	87312KNM	1952

7590 01/09/2007
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EXAMINER

LAO, LUN YI

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/712,329

Applicant(s)

STEPHENSON, STANLEY W.

Examiner

LUN-YI LAO

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the US Patent Application Serial No. need to fill out on page 1, line 5. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephenson et al(6,423,368) in view of Yoshinaga et al(5,272,552).

As to claims 1 and 8, Stephenson et al teach a display writer for writing on a light writable display having a layer of cholesteric liquid crystal material(30, cholesteric liquid crystal)(see figures 2A-3, 5, 8A, 8B; column 2, lines 24-36; column 5, lines 55-65 and column 6, lines 12-21) disposed between two conductors(20, 22)(see figures 8A-8B and

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column 8, lines 41-45), the cholesteric liquid crystal material(30) having multiple stable optical states(a planar state(72) or focal-conic state(74) at zero electrical field(see figures 5A, 5B; column 1, lines 61-68 and column 6, lines 12-35); and a light absorber(70) for forming an image thermal pattern(heating) in the cholesteric liquid crystal sufficient to change the optical state of the cholesteric liquid crystal in response to a light(40)(see figures 2A-3, 5, 8A-8B; column 4, lines 35-46; column 6, lines 59-68; column 7, lines 1-9 and column 8, lines 1-12). Stephenson et al teach a display writer comprising means for applying electrical field(E) to the conductors(20, 22) of the display(10)(see figure 8B; column 8, lines 1-12 and lines 41-52).

Stephenson et al fail to disclose a flash lamp, a reflective light modular and optics.

Yoshinaga et al teach a display writer a display writer for writing on a light writable display having a layer of cholesteric liquid crystal material(see figures 1, 5, 7; column 1, lines 25-39; column 2, lines 40-68; column 3, lines 20-43 and column 4, lines 1-2) disposed between two conductors(2, 5, or 25, 26)(see figures 1, 5-7 and column 41, lines 38-53). Yoshinaga et al teach a display writer comprising a light absorber(32 or 37)(see figures 6-7; column 39, lines 30-33; column 42, lines 16-48 and column 43, lines 28-36); a flash lamp(7 or 22 , laser light, see figures 1, 5; column 41, lines 38-59 and column 45, lines 36-40); a reflective light modulator(9-11) for modulating light from the flash lamp(7) an image wise pattern; optics(8, 13, 24) for directing the image wise modulated light onto the light writable display(1-5)(see figures 1, 5, 7; column 41, lines 38-59; column 45, lines 33-68 and column 46, lines 21-37) and means for applying

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electrical field(15) to the conductors(2, 5) of the display(1-5)(see figure 1 and column 41, lines 38-45). It would have been obvious to have modified Stephenson et al with the teaching of Yoshinaga et al, so as to provide a writable display having a high contrast and first recording and erasure speeds(see column 2, lines 31-36) and a gradational display could be effected relatively easily(see column 41, lines 15-19).

4. Claims 2, 4-7, 9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephenson et al(6,423,368) in view of Yoshinaga et al(5,272,552) and Anderson et al(EP 0,795,771).

As to claims 2, 4-7, 9 and 11-14, Stephenson et al fail to disclose the flash lamp is a short arc flash lamp and a digital micro-mirror light modulator.

Anderson et al teaches a display writer comprising the flash lamp is a short arc(curved) flash lamp(32) and a digital micro-mirror light modulator(18 or 110)(see figures 1-3, 8; column 7, lines 25-30 and column 13, lines 37-44). It would have been obvious to have modified Stephenson et al as modified with the teaching of Anderson et al, so as to increase the optical efficiency of the system by using the digital micro-mirror(see column 1, lines 57-68 and column 2, lines 1-2) and since a change in shape is generally recognized as being within the level of ordinary skill in the art. See Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459.

As to claims 2 and 9, it would have been obvious to have a flash lamp with an arc less than 3mm since Anderson et al teach a flash lamp(32) could be a curved or linear array of light source(see figures 2-3, 8 and column 13, lines 46).

As to claims 4 and 11, Stephenson et al as modified teach the optics(8, 13) having collimating optics(8) between the flash lamp(7) and the reflective light modulator(9-11) and projection optics(13) between the digital micro-mirror light modulator and the display(1-5)(see figure 1 and column 41, lines 38-45).

As to claims 5-7 and 12-14, Stephenson et al teach the optics transmit both visible and infra red light(see Anderson's column 13, lines 37-41).

5. Claims 3-7 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephenson et al(6,423,368) in view of Yoshinaga et al(5,272,552) and Huang et al (5,467,146).

As to claims 3-7 and 10-14, Stephenson et al as modified fail to disclose a flash lamp with a reflector and a digital micro-mirror light modulator.

Huang et al teach a display system comprising a lamp(16, 21) with a reflector (21) and a digital micro-mirror light modulator(15)(see figures 1-2 and column 3, lines 35-57). It would have been obvious to have modified Stephenson et al as modified with the teaching of Huang et al, so the a flash lamp need not be directly toward to the light modulator and so as to increase the optical efficiency of the system by using the digital micro-mirror.

As to claims 5-7 and 12-14, Stephenson et al teach the optics transmit both visible(red, green, blue or white) and infra red light(see Stephenson's figure 1; Huang's column 1, lines 30-37 and column 3, lines 22-34).

Response to Arguments

6. Applicant's arguments filed on October 20, 2006 have been fully considered but they are not persuasive.

In response to applicant's argument that Yoshinaga is concerned with polymer liquid crystal and it is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Yoshinaga teach polymer liquid crystal composed of cholesteric liquid crystals or chiral nematic liquid crystal(see column 1, lines 25-39 and column 42, lines 1-13).

Applicant argues that Yoshinaga does not teach a flash lamp that emits a beam of incoherent full spectrum white light on page 6. However, such limitation can not be found in claims 1 and 8.

Applicant argues that Yoshinaga would not produce a Applicant claimed method. The examiner disagrees with that since the combination of Spephenson et al and Yoshinaga et al meet all the limitation cited in claims 1 and 8 .

Applicant argues that Anderson is not analogous to a cholesteric display on page 7. However, Anderson is not cited for teaching a cholesteric display, but a shape of a flash lamp.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant argues that Huang is not analogous to a cholesteric display on page 8. However, Huang is not cited for teaching a cholesteric display, but a lamp with a reflector and a digital micro-mirror light modulator.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ueda et al(6,580,481) and JP 2001-59954 show information could be written in cholesteric liquid crystal by laser beam(see Ueda's column 12, lines 17-25 and abstract of JP 2001-59954).

Hareng et al(4,288,822) teach information could be written in cholesteric liquid crystal by laser beam.

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8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

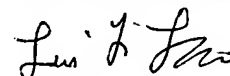
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 5, 2007



Lun-yi Lao

Primary Examiner